



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,519	06/20/2006	Ofer Snich	020008.0112PTUS	8637
24283	7590	01/26/2010		
PATTON BOGGS LLP 1801 CALIFORNIA STREET SUITE 4900 DENVER, CO 80202				
EXAMINER				
CHEN, KEATH T				
ART UNIT		PAPER NUMBER		
1792				
MAIL DATE		DELIVERY MODE		
01/26/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/563,519

**Applicant(s)**

SNEH, OFER

**Examiner**

KEATH T. CHEN

**Art Unit**

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/22/2009 has been entered.

### ***Response to Amendment***

1. The claim amendment filed on 12/22/2009, addressing claims 1-11 and 16 rejection from the non-final office action (06/24/2009), by amending claims 1-11 and 16 is acknowledged and will be addressed below.

### ***Response to Affidavit***

2. The declaration under 37 CFR 1.132 filed on 12/22/2009 is insufficient to overcome the rejection of claims 1-11 and 16 based upon '146, '025, '603, and '706, as set forth in the Final Office action (06/24/2009) because:

- a. In items 6-8, Affiant asserting that the "flow restricting element" is equivalent to "flow restrictor" which has no moving part, produce a substantial pressure drop and flow velocity increase; diffuser of Halsey '025 is not an FRE, and refers to page 26, lines 7-15 as being the FRE as known in the art.

The examiner disagrees with Affiant's equating "flow restricting element" with the narrow definition "flow restrictor". It appears Affiant attempts to re-define

the term. The term "flow restriction device/element/unit" and "flow restrictor" are commonly used inclusive a non-static device; therefore not according to Applicant's narrow interpretation of "flow restrictor" without moving part above:

US 2439458, flow restricting device #45, Fig. 1, col. 3, line 53 (does not produce substantial pressure drop).

US 5985033, flow restricting member #110, Fig. 1, col. 6, line 5 and US 6716287, flow restricting ring #180, Fig. 1, col. 4, line 5 (do not produce flow velocity increase, merely alter flow direction, and has substantially smaller volume compare to chamber).

There are also numerous references that teach a flow restrictor can be various types of valves (with moving part). Clearly FRE is not limited to devices with no moving part. The rest of the limitation of claim 1 "first FRE is an immobile flow restricting element" limits the claim to immobile FRE, further evidenced that FRE can be mobile.

The examiner maintains that '025's diffuser #200, which alters the flow direction (besides "spreading gas).

b. Item 12: Affiant asserts that, with file wrapper estoppel, the definition of FRE in the claims correlates to what one skill in the art recognizes as an FRE.

This assertion does not clarify what the FRE is in the claim. As discussed above, FRE has multiple definitions by different users in the arts. Furthermore, new definition may come as time goes. Applicant is entitled to the Specification (for example, page 26, lines 7-15) that demonstrates the knowledge at the time

of the invention, not the unclear concept of FRE of "one skill in the art" that evolves by the time.

c. In items 13-16: Affiant repeats similar arguments in the "Remark/Argument" section without providing evidence of probative value. These arguments are addressed in Response to Arguments below.

d. Item 17-28, Affiant provided evidence of long-felt need and commercial success and attributed the success to the claims 1-11 and 16.

The long felt need and commercial success of the apparatus is acknowledged. However, Affiant has not provided evidence that attributes the commercial success to the feature of the claim in the instant Application.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35 U.S. Code not included in this action can be found in a prior Office action.

**3. Claims 1, 3-5, 7-11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhatnagar et al. (US 6391146, hereafter '146), in view of Halsey et al. (US 6663025, hereafter '025) and Heinze (US 2028603, hereafter '603),.**

4. '146 teaches some limitations of:

5. Claim 1: An apparatus (Fig. 4, abatement system #200, col. 8, line 26, part of the system of Fig. 1, including the throttle valve #82 from Fig. 1 and downstream parts) for controlling the pressure in a process chamber (affecting the pressure of the chamber from downstream because they are in fluidic communication, similar to Applicants apparatus), said apparatus comprising: a pressure control chamber (PCC) (exhaust

tube #85, similar to exhaust tube shown in various figures in instant application); a gas source (one of the #235, col. 7, lines 37-40); a flow controlling device (one of the mass flow controller MFC #240, col. 8, lines 6-7) in serial fluidic communication downstream from said gas source and upstream from said PCC for controlling the PCC pressure (by controlling MFC #240) and the pressure in said process chamber (the pressure in #85 affects the pressure in the process chamber), a vacuum pump (#125, col. 3, line 66) for creating a sub atmospheric pressure in said apparatus.

6. '146 does not teaches the other limitations of:

7. Claim 1: a first flow restricting element (FRE), wherein said first FRE is an immobile flow restricting element; said first FRE located in serial fluidic communication with said process chamber and downstream from said process chamber; (a pressure control chamber PCC) located in serial fluidic communication downstream from said first FRE; a second FRE located in serial fluidic communication downstream from said PCC, wherein said second FRE is an immobile flow restricting element, (a vacuum pump) downstream from said second FRE.

8. '025 is an analogous art in the field of manufacturing of semiconductor devices using plasma (field of the invention; similar to '146, col. 1, lines 53-56 and col. 3, line 13), particularly in rapid cycling of venting and pumping gas (col. 2, lines 39-41; similar to '146 effluent gas treatment, abstract). '025 teaches an immobile diffuser (#200, Fig.

4A or 4B, altering the direction of the flow, therefore, a flow restricting element) at the bottom of the chamber (see Fig. 3A).

9. '603 is an analogous art in the field of turbo pump (title, right col. of page 2, line 40). '603 teaches a screen/flow restricting element (#44, Fig. 7, right col. of page 2, lines 65 to 75).

10. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have added a diffuser (the claimed first immobile FRE), as taught by '025, to the bottom of chamber in Fig. 1 of '146, therefore, the first FRE downstream of the process chamber and upstream of Fig. 4 of '146. Furthermore, to have added a screen (the claimed second FRE) in front of pump (#125 of '146).

11. The motivation to add an immobile diffuser/flow restrictor is to provide a rapid cycle in venting and pumping gas, as taught by '025 (col. 2, lines 39-41), and to reduce minute particle contamination (col. 3, lines 26-28). The motivation to add screen/second immobile FRE in front of pump is to remove particles, as taught by '603, (right col. of page 2, lines 72-75).

12. '146 also teaches some limitations of:

13. Claim 5 (besides the limitations of claim 1): A wafer processing apparatus comprising a process chamber (Fig. 1, #25), a process reactive gas supply line (line connects between #70 and nozzle #72) from a process gas source (#70, col. 3, lines

36-38) in serial fluidic communication with said process chamber and upstream from said process chamber; an upstream flow control device (the valve as shown in Fig. 1, not labeled) located in serial fluidic communication upstream from said process chamber and downstream from said process gas source.

14. Claim 16 (besides the limitations of claim 1): (b) a pressure control chamber (PCC) (#210, gas energized reactor); (d) a gas source (one of the #235, col. 7, lines 37-40); (e) a flow controlling device (one of the control valve #240) in serial fluidic communication downstream from said gas source and upstream from said PCC for controlling the PCC pressure and the pressure in said process chamber; (f) a reactive gas source (the second #235, col. 8, lines 12-13) connected in serial fluidic communication upstream from said PCC; (g) an abatement element (#226a-b, electrode) located within said PCC; and (h) a vacuum pump (#125, col. 3, line 66) for creating a sub atmospheric pressure in said apparatus.

15. '146 does not teaches the other limitations of:

16. Claim 5: a first flow restricting element (FRE) located in serial fluidic communication downstream from said process chamber, wherein said first FRE is an immobile flow restricting element; a second FRE located in serial fluidic communication downstream from said PCC, wherein said second FRE is an immobile flow restricting element, (a vacuum pump) downstream from said second FRE.

17. Claim 16: (a) a first flow restricting element (FRE) located in serial fluidic communication downstream from said process chamber, wherein said first FRE is an



immobile flow restricting element; (b) b) (a pressure control chamber PCC) located in serial fluidic communication downstream from said first FRE; (c) a second FRE located in serial fluidic communication downstream from said PCC, wherein said second FRE is an immobile flow restricting element; (h) (a vacuum pump) downstream from said second FRE.

18. For substantially the same reason as claim 1 rejection above, claims 5 and 16 are rejected.

19. '146 also teaches the limitations of:

20. Claims 4 and 8: An apparatus as in claim 1 (or a wafer processing apparatus as in claim 5); said process chamber (#25) and said PCC (#85) are formed as compartments within a single process vessel (#200, #85, and wall of chamber #25 are connected into a single vessel).

21. '146 does not teaches the limitations of:

22. Claims 4 and 8: said first FRE is formed within the partition between said process chamber (#25) and said PCC (#85).

23. In the above combination, '025 teaches the diffuser/first FRE (#200 imported into '146) is formed within the partition between said process chamber (#25, particularly the

plasma region #35 in Fig. 1 of '146) and said PCC (#85).

24. '146 also teaches the limitations of:

25. Claim 9: A wafer processing apparatus as in claim 5 wherein said wafer processing apparatus comprises a low pressure chemical vapor deposition LPCVD (col. 12, line 35, CVD; col. 3, line 39, low pressure).

26. Claim 10: A wafer processing apparatus as in claim 5 wherein said wafer processing apparatus comprises a reactive ion etching RIE apparatus (col. 4, line 4 and col. 3, line 40, plasma etching is RIE).

27. Claim 11: A wafer processing apparatus as in claim 5 wherein said wafer processing apparatus comprises a plasma enhanced chemical vapor deposition PECVD apparatus (col. 3, line 40).

28. For claims 9-11, applicant's claim requirements "LPCVD", "RIE", and "PECVD" are considered intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

29. '146 further teaches the limitations of:

30. Claims 3 and 7: An apparatus as in claim 1 (or a wafer processing apparatus as in claim 5), and further comprising: an abatement chamber (#210, gas energized reactor); a reactive gas source (the second #235, col. 8, lines 12-13) connected in serial fluidic communication upstream from said abatement chamber; and an abatement element (#226a-b, electrode) located within said abatement chamber.

31. '146 does not teach the limitations of:

32. Claims 3 and 7: A third FRE connected in serial fluidic communication downstream from said PCC; (an abatement chamber) connected in serial fluidic communication upstream from said third FRE

33. '146 further teaches a throttle valve at the inlet #211 to prevent backflow (col. 6, lines 35-38). At the time the invention was made, it would have been obvious to a person of ordinary of skill in the art to have added an additional throttle valve between the outlet (#212, Fig. 4) and pumps (#125) to further prevent backflow of effluent (#100). This additional throttle valve would have been a third FRE downstream from said PCC(#85) and the abatement chamber (#210) upstream from said third FRE.

34. Motivation would have been to further prevent backflow of effluent, as taught by '146 (col. 6, lines 35-38).

35. '146 discloses the claimed invention except for an additional throttle valve. It would have been an obvious matter of design choice to duplicate the throttle valve, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

**36. Claims 1-2 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over '146, in view of '025 and '603 (note the mapping is different from the rejection above).**

37. '146 teaches the limitations of:

38. Claim 1: An apparatus (Fig. 4, abatement system #200, col. 8, line 26, part of the system of Fig. 1, including the throttle valve #82 and parts downstreams) for controlling the pressure in a process chamber (affecting the pressure of the chamber from downstream because they are in fluidic communication, similar to Applicants apparatus), said apparatus comprising: a pressure control chamber (PCC) (#210, gas energized reactor); a gas source (one of the #235, col. 7, lines 37-40); a flow controlling device (one of the mass flow controller MFC #240, col. 8, lines 6-7) in serial fluidic communication downstream from said gas source and upstream from said PCC for controlling the PCC pressure (by controlling MFC #240) and the pressure in said process chamber (the pressure in #85 affects the pressure in the process chamber), a vacuum pump (#125, col. 3, line 66) for creating a sub atmospheric pressure in said apparatus.

39. Claim 5 (besides the limitations of claim 1): A wafer processing apparatus comprising a process chamber (Fig. 1, #25), a process reactive gas supply line (line

connects between #70 and nozzle #72) from a process gas source (#70, col. 3, lines 36-38) in serial fluidic communication with said process chamber and upstream from said process chamber; an upstream flow control device (the valve as shown in Fig. 1, not labeled) located in serial fluidic communication upstream from said process chamber and downstream from said process gas source.

40. '146 does not teaches the limitations of:

41. Claim 1: a first flow restricting element (FRE), wherein said first FRE is an immobile flow restricting element; said first FRE located in serial fluidic communication with said process chamber and downstream from said process chamber; (a pressure control chamber PCC) located in serial fluidic communication downstream from said first FRE; a second FRE located in serial fluidic communication downstream from said PCC, wherein said second FRE is an immobile flow restricting element, (a vacuum pump) downstream from said second FRE.

42. Claim 5: a first flow restricting element (FRE) located in serial fluidic communication downstream from said process chamber, wherein said first FRE is an immobile flow restricting element; a second FRE located in serial fluidic communication downstream from said PCC, wherein said second FRE is an immobile flow restricting element, (a vacuum pump) downstream from said second FRE.

43. '025 and '603 are analogous arts as discussed above. For substantially the same reason as discussed above in previous claim 1 rejection, claims 1 and 5 are also

rejected by this different mapping of '146 in view of '025 and '603.

44. '146 does not teaches the limitations of:

45. Claims 2 and 6: An apparatus as in claim 1 (or a wafer processing apparatus as in claim 5), and further comprising: a reactive gas source (the second #235, col. 8, lines 12-13) connected in serial fluidic communication upstream from said PCC; and an abatement element (#226a-b, electrode) located within said PCC.

**46. Claims 1, 3-5, 7-11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over '146, in view of Strang (US 20030227258, hereafter '258) and '603.**

47. '146 teaches some limitations and does not teach the other limitations of claims 1, 5, and 16 as discussed above.

48. '603 is an analogous art as discussed above.

49. '258 is an analogous art in the field of plasma reactor chamber (title), particularly in tunable chamber vacuum characteristic ([0002]) with exhaust orifice plate ([0008]; similar to '146 effluent gas treatment, abstract). '258 teaches an immobile orifice plate (#17, fig. 1, [0028], or #40, Fig. 2, [0030]) that surrounds chuck #14 and seals against the wall of reactor chamber #12.

50. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have added an orifice plate (the claimed first immobile FRE),

as taught by '258, to the bottom of chamber in Fig. 1 of '146, therefore, the first FRE downstream of the process chamber and upstream of Fig. 4 of '146. Furthermore, to have added a screen (the claimed second FRE) in front of pump (#125 of '146).

51. The motivation to add orifice plate is to change the flow field within the reactor chamber, as taught by '258 ([0028]).

52. Claims 3, 4, 7-11 are rejected for substantially the same reason as discussed in rejection by the combination of '146, '025, and '603 above.

**53. Claims 1-2 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over '146, in view of '258 and '603 (note the mapping is different from the rejection immediately above).**

54. '146 teaches some limitations and does not teach the other limitations of claims 1 and 5 as discussed above.

55. Claims 1-2 and 5-6 are rejected for substantially the same reason as discussed in rejection by the combination of '146, '025, and '603 above; instead of '025, using '258 as discussed immediately above.

#### ***Response to Arguments***

56. Applicant's arguments filed on 12/22/2009 have been fully considered but they are not persuasive.

57. Applicant complains that the examiner is purposely vague about whether the whole of diffuser #200 of Halsey '025 is the claimed FRE or only a part of it is FRE; does not hint at which mode of operation is equivalent to the FRE and which end is attached to toward the pump, see lines 8-13 of page 8.

This argument is found not persuasive.

The diffuser, at least, alters the direction of the flow. Either the whole diffuser #200, or the part that alter the flow, can be considered FRE. It does not matter which modes or which end is attached in what way. (If Applicant insists, both modes and the #200 can be incorporated in the upright direction to '146). It appears Applicant is looking for the narrow interpretation of FRE that looks like 202 in Fig. 2 of instant Application. The examiner is rejecting the claim based on a reasonable broadest interpretation of the FRE.

58. Applicant argues that the complex set of vanes and channels (#200 of '205) to '146 does not make sense, because it will collect deposits and will be difficult to clean in front of abatement system #200, see lines 17-19 of page 8.

This argument is found not persuasive.

The diffuser #200 of '025 is to trap the particles. Set up to remove the collected particles is well within the skill of a person having ordinary skill in the art. It is not clear why Applicant consider it more difficult in front of abatement system.

59. Applicant complains that the examiner does not even try to make any articulated reasoning as required by KSR ... and mis-interprets and misquotes '205..., one sees that the chamber is not the diffuser ..., see the bottom paragraph of page 8.



This argument is found not persuasive.

The examiner maintains that the rejection is properly and elaborated explained in terms of *Graham v. Deere* analysis (note the first office action mailed 11/28/2007 was done before the KSR decision) and in the spirit of KSR. The examiner has never equated chamber to a diffuser, as asserted by the Applicant.

60. Applicant argues that the diffuser #200 of Hasley '025 is useful only in flowing and pumping gas in and out of chamber, there is no suggestion in Halsey '025 that the apparatus 200 would be useful in combination with an abatement system of '146, see lines 1-4 of page 9; likewise, there is no suggestion in '146 that there are particles that need to be screened out, see lines 9-10 of page 10.

These arguments are found not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, a person of ordinary skill in the art would have recognized that adding diffuser would have reduce particle contamination and improve a rapid cycle (for throughput), either with or without an abatement system. Likewise, a person of ordinary skill in the art would have recognized particles contamination is well-known problem for the pump.

61. Applicant further argues that diffuser #200 of Hasley is not a flow restriction element, see lines 4-5 of page 9.

This argument is found not persuasive.

As addressed in response to Affidavit above, a diffuser, at least, alters the direction of the flow.

62. Applicant further argues that there is no evidence in the prior art that a screen is equivalent to an FRE, see lines 3-4 of the bottom paragraph of page 10.

This argument is found not persuasive.

It is strange that Applicant argues that screen is an FRE (exhibit B, line 2 of middle paragraph) on one hand and argues that screen is not an FRE in another. Furthermore, is #202 in Fig. 2 a screen? It appears that Applicant does not have a clear view what is included in his own definition of FRE, even in light of all the exhibits provided by the Applicant.

63. Applicant further argues that the examiner pays no attention to why a screen is useful in an air compressor of Heinze '603 would be useful in '146, why a screen is an FRE, and why a screen would be useful in pressure control, see lines 4-end of the bottom paragraph of page 10.

This argument is found not persuasive.

The examiner has clearly pointed out the '603 teaches a turbo pump (right col. of page 2, line 40) in the last office action. It is well-known turbo pump can be used in vacuum processing. Again, it is not clear why Applicants considers a screen on a turbo pump that is useful in '603 would not be useful in '146, (in the presence of abatement

system #200?). A person of ordinary skill in the art would have recognized particles contamination is well-known problem for the pump.

The screen is an FRE by Applicants own exhibit B as discussed above.

The screen would be useful in controlling the pressure similar to Applicant's apparatus and by controlling the valve #240, the screen hold the pressure in the PCC.

64. Applicant further argues that the examiner use impermissible hindsight, see the bottom of page9 to page 10.

This argument is found not persuasive.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

It appears that Applicants has a very narrow interpretation of FRE in the above high-sight argument.

The examiner has demonstrated that the term FRE is very broad and is commonly used in various parts of the processing apparatus that read into the current claim. It appears that Applicant keeps shifting on his own definition what is FRE or what is not (see the argument of screen, for example). The examiner further includes a new

reference '258 in the rejection above to demonstrate that an orifice plate can be read as an FRE.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEATH T. CHEN whose telephone number is (571)270-1870. The examiner can normally be reached on 6:30AM-3 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KEATH T CHEN/  
Examiner, Art Unit 1792